The Role of Occupational Stress in The Contemporary Fire Service: Psychological Stress, Its

Causation, Identification, Treatment, Reduction, and Resolution

Executive Development

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This research attempted to identify the aspects of psychological stress, its causation, identification, treatment, reduction and resolution in a small suburban fire department. The research methods used were both historical and action oriented. Firefighter stress is the problem and it is prevalent in a number of fire departments, and it appears to be increasing. In fact, one study put the atrisk population of firefighters at 15 to 20 percent. Psychological stress is a complex phenomenon. Therefore, to identify all the potential sources was problematic. The purpose of this research was to investigate the psychological fitness and wellness of these firefighters and to make recommendations for a positive change. While the topic of firefighter stress is somewhat bleak, there have been some positive discoveries. Some positive information gathered included the collaboration of several organizations and individuals who together will be better able to explain this phenomenon and to offer new solutions. Using this research material, the following questions were addressed:

- 1) What psychological fitness and wellness standards currently exist at the national, state and local levels?
- 2) Should psychological testing be used to screen new recruits?
- 3) Are firefighters, as part of our emergency response system, a group that is at special or additional risk for psychological stress related problems?
- 4) What can be done to manage, reduce, or eliminate this risk of psychological stress in the general firefighter population?

We are strongly motivated to answer these questions because these stressors which prey on our firefighters seem to be increasing in number and severity. A number of limitations were found, such as data scarcity, unsupported data and conflicting data.

Some research results were surprising. Firefighters are stressed by their own station living environment, their protective gear, their officers and leaders, current management styles, coworkers, and the stress of leaving their families and loved ones during natural and man-made disasters.

Research also provided results that were not so surprising. When firefighters and other emergency workers were briefed before entering a horrific scene, such as an air crash scene, the psychological trauma was lessened. When staging area briefings were lead in an orderly, thoughtful manner and following set protocols, the psychological stress was reduced.

Certain personality types did not cope well with psychological stress. However, they did cope better with the proper indoctrination, education, and training. From this we concluded that support must come early because the fire service relies heavily on its personnel to meet many challenges and must be protected from both physical and psychological trauma.

As for recommendations, the physical condition of our personnel has long been scrutinized and thus improved by using medical screening programs, and physical fitness programs. This is clearly outlined in the National Fire Protection Association's (NFPA) Standards 1500 and 1582.

The aspects of psychological fitness were much more nebulous. Yet, with 15 to 20 percent of our personnel at risk, it behooved us to examine this area as a potential threat and to explore ways to confront it. This became more apparent when we examined the effects of firefighter stress in light of such events as the Nimitz Freeway Disaster, the Kansas City Skywalk Collapse, the Sioux City Airline Disaster, the Oklahoma City Bombing, and the Columbine High School Incident. The study recommended pre-employment screening, psychological and physical wellness programs, the use of Critical Incident Stress Management, employee assistance programs and chaplaincy interaction where appropriate.

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The Mountain Brook Fire Department does not have a comprehensive psychological fitness and behavioral wellness program for its personnel. This is our problem. It does, however, have a number of the component parts which can contribute to such a program. The purpose of this research was to investigate the psychological fitness and wellness of these specific firefighters and firefighters in general. It was important to include the general firefighter population since this department with only sixty-two employees could generate inaccurate conclusions based on its reasonably small sample population. This investigation was designed to look at the relevant information available from a wide range of sources to help develop a strategy to cope with cumulative stress, critical incident stress disorder (CISD)and post-traumatic stress disorder (PTSD). With these resources some general guidelines could be developed in order to aid fire service managers in their efforts to cope with these problems.

The methodology used included a comprehensive literature search. This research included literature that was germane to the fire service. Relevant information also came from psychological texts, journals, magazine articles, news articles and personal conversations and correspondence. Information examining job-related stress in the general population and related emergency service worker groups (law enforcement officers and emergency medical technicians) was also examined. As my research methodology embraced the historical, more than five decades of information were reviewed for this work. As this was also action research, my recommendations also include a psychological wellness plan for a small to a medium size fire department. The two research methods indicated were used to answer the following research questions:

- 1) What psychological fitness and wellness standards currently exist at the national, state and local levels?
- 2) Should psychological testing be used to screen new recruits?

- 3) Are firefighters, as part of our emergency response system, a group that is at special or additional risk for psychological stress related problems?
- 4) What can be done to manage, reduce or eliminate this risk of psychological stress in the general firefighter population?

BACKGROUND AND SIGNIFICANCE

Psychological stress in the Mountain Brook Fire Department has intermittently become a management concern. While this department serves a small suburban community of 23,000 residents, it is significantly different from a typical suburban community setting. An elite community set in the Jones Valley near Birmingham, Alabama. It is home to a variety of professionals and corporate executives. This population of professionals has expressed a much higher expectation of its city's employees. Because the average home in the city is well above that which a firefighter can reasonably afford, the fire department's staff lives outside the city. This makes community allegiance and connectivity much more difficult than in a typical suburban atmosphere.

Over the years, one of our firefighters, killed his wife and then himself. Another firefighter transferred from a larger department, worked several years, resigned and committed suicide. Others have been involved in a variety of physical altercations, domestic problems, and stress-related episodes and illnesses. One employee who appears to have become a recluse, retired and left the country. His problems followed him overseas.

While the department is fifty-nine years old, only in the last four years has it questioned the psychological fitness of its firefighters. Four years ago, a psychological screening component was added to the department's pre-employment regimen. Chief Robert Ezekiel, recognizing the need to assure that his department's personnel were both psychologically well and physically fit, instituted

Chief Ezekiel consulted with the city's management and its employee assistance program staff. Together, they agreed to use a well known test, the Minnesota Multi-phasic Personality Inventory (MMPI). "This is an objective personality test consisting of more than 500 standard true-or-false questions that can provide a description of the overall personality profile of an individual. When used correctly, it reveals a great deal about a person's grasp of reality, impulse control, depression, guilt, major defenses, and symptoms due to psychological problems. Fairly sophisticated interpretations of MMPI are offered by commercial computer services" (Mayo Clinic, 1990). The Hilson Safety and Security Risk Inventory (HSRI) is used in conjunction with the MMPI. The Hilson refines and validates the information gathered by the MMPI and completes an appropriate battery of inquiry.

The screening is only one parameter of our fire department's recruit acquisition, testing and training regimen. First, the candidate is required to complete a general aptitude test designed for firefighter recruits that is administered by the Personnel Board of Jefferson County. Next, the successful candidates are required to complete a comprehensive physical agility test. The candidates are then listed by score for hiring in one of the many municipal jurisdictions within Jefferson County. After the department's interview process, the successful candidate(s) are required to complete a physical examination, a drug screen, and the psychological screening instruments. The addition of this screening has assisted the fire department in determining that all new recruits are psychologically well for this demanding career.

A missing component is a comprehensive psychological wellness program to promote psychological wellness maintenance over a career lifetime. We strive to employ only those recruits that

are psychologically well, so that we may to retain and eventually retire those individuals with the same level or even improved psychological wellness and stability.

Implementing a psychological wellness program for firefighters relates to "Unit Two:

Professional Development, Unit 7: Organizational Culture, and Unit 10: Service Quality and Marketing,"
of the Executive Development Course (National Fire Academy [NFA], 1998) of the Executive Fire

Officer Program. The modules describe the role of the executive fire officer in organizational care and development. The fire service's most important asset has always been its employees. Their psychological, as well as their physiological well-being, is not only of paramount importance to them, but also to their families, their department, and their community.

LITERATURE REVIEW

A review of fire service and psychological literature, relating to firefighters and similar emergency responders, reveals the critical importance of psychological wellness for combating the occupational stress inherent in this career. No time in the history of the American fire service has this been more apparent. Incidents such as the Nimitz Freeway Collapse, the World Trade Center Bombing, the Oklahoma City Bombing, Kansas City Skyway Collapse and the Olympic Park Bombing in Atlanta, Georgia, are requiring our people to endure more than ever before. Fire service personnel are being asked to withstand horrendous physical and psychological assaults as they perform their duty.

Olin L. Greene, U.S. Fire Administrator, expressed this in his forward to *Stress_Management*, *Model Program for Maintaining Firefighter Well-Being*, (United States Fire Administration, [USFA], 1991). "Stress is one of the most serious occupational hazards facing the modern fire service. It is important to recognize exactly how stress can adversely affect our health, job performance, career decision-making, morale, and family life." As this was published by the United States Fire Administration in February 1991, could they have foreseen the coming natural disasters, the acts of

The earliest research on stress disorders that increased the psychological burden of those involved comes not from the civilian arena, but rather from the military. While the role of stressful events was identified much earlier than World War I, it was during that war that they were first studied in a reasonably scientific and comprehensive fashion. "During World War I traumatic reactions to combat conditions were called "shell shock," a term coined by a British pathologist, Colonel Frederick Mott, who regarded such reactions as organic conditions produced by minute hemorrhages of the brain." (Coleman & Broen, 1972) Only later, during World War II, did this error in the understanding of combat stress psychology begin to be more clearly and accurately understood. When physical fatigue and psychological factors (such as long periods without rest, danger, noise, & deprivation) began to be examined, only then did the theories of organic brain damage and the accusations of weak or flawed character dissipated. World War II, the Korean War, and the Vietnam War were important to our research because they were the first situations where significant data related to psychological stress was compiled and examined. This information has been of great importance in studying the occupational stress found in firefighting, law enforcement and EMS. This is not totally surprising, since these organizations are each paramilitary in nature.

A firefighter's psychological reaction to civilian catastrophes is similar to those seen in wartime.

An example of this was the sudden death of more than 500 people in less than eight minutes at the Iroquois Theater Fire of 1903. The reactions were similar to those recorded during World War I about a decade later.

A transitional event that was very significant in the study of civilian victim and emergency worker stress was the Cocoanut Grove Fire of 1942. "In civilian life, people exposed to plane crashes,

automobile accidents, explosions, fires, earthquakes, tornados, sexual assaults, or other terrifying experiences frequently show shock reactions-transient personality decompensation. Over half the survivors of the disastrous Cocoanut Grove Nightclub fire, which occurred in Boston in 1942, for example, required treatment for severe psychological shock," (Adler, 1943).

After the Cocoanut Grove fire, the threats to our psychological health and well being were studied in far greater detail in the civilian populations, including victims and rescuers. The shock, suggestibility, and recovery stages were first outlined by Raker, Wallace & Raymer, 1956.

In the 1960's, Keiser explored the complex nature of post-traumatic stress. "Here it may be noted that the assurance or even the possibility of monetary compensation may lead to actual prolongation of post-traumatic symptoms . . . "(Keiser, 1968).

What can be done to protect the firefighter from psychological stress and its ill effects? Since it cannot be avoided, it must be understood and managed. We have several examples, but not a comprehensive package for the fire service:

• Operation Outreach for Vietnam Veterans, 1979

"In 1979 the United States Congress established Operation Outreach, a network of ninety-one storefront counseling centers for psychologically disturbed Vietnam veterans. Counseling was conducted in a low-key "rap session" format in which groups of veterans could share their feelings about the war, its aftermath and, finally, begins the process of readjusting to civilian life." (Crider, Goethals, Kavanaugh, and Solomon, 1983)

Stress Management, Model for Maintaining Firefighter Well-Being, (USFA, 1991)

Emergency Services Stress, Guidelines For Preserving The Health and Careers of

Emergency Services Personnel, (Mitchell & Bray, 1990)

However, these are only blueprints and the work that support them is still to be completed. The concept of good mental health and psychological well-being needs to be introduced to fire officers and firefighters alike. In Fire Command, psychological concerns are not addressed in any of the functional sections such as safety, resources, rehabilitation, or medical (Brunacini, 1985). In the *Incident* Command System, psychological concerns are also not addressed in the medical unit section (Carlson & Vandevort, 1983). In Essentials of Fire Fighting, Third Edition, the psychological concerns of firefighters are only briefly mentioned, "Firefighters must be physically and mentally prepared . . . " (Wieder, Smith, & Brackage, 1992). Then six pages are dedicated to the firefighter's physical wellbeing including, physical fitness, cardiovascular training, muscle training, back injury prevention, nutrition, the effects of cigarette smoking and safety. These are all very important topics, but the mental health and the psychological wellness of firefighters are not mentioned again. Both NFPA 1500 and 1582, mention psychological fitness and well-being, but fail to elaborate on this important area. Is this important? Yes, interestingly enough, several recent articles, a number of books and some texts have listed firefighting as the most stressful occupation in America.

This stress is further explored by (Mitchell, 1995). "The recent suicides of O'Donnell and other high-profile paramedics lead us to believe that emergency personnel are killing themselves in greater numbers than ever, although statistics to support this assumption are hard to find."

In addition, firefighters are a stressed subculture in a nation of stress. "Suicide is the ninth leading cause of death in the United States with 31,204 deaths recorded in 1995. That is about one death every seventeen minutes. There are more suicides than homicides each year in the United States." "From 1952 to 1992, the incidence of suicide among teens and young adults tripled. Today, it is the third leading cause of death for teenagers aged 15-19 (after motor vehicle accidents and

unintentional injuries). Suicide is increasing, particularly for those less than 14 and for those more than 12 65" (National Institute of Health, [NIH] 1999). This is linked to our firefighter population by the following: "Exposure to the suicidal behavior of others, including family members, peers, and/or via the media in news or fiction stories" has a direct link to the increase in suicides (NIH, 1999). It can be linked further by the fact that firefighting is traditionally a young white male occupation. The National Institute of Health (NIH) points out that "More men than women die by suicide." The ratio is 4.5 males to one female. Most significant is the statistic that 73% of all suicides are committed by white men. Because suicide and stress are complex behaviors further data and information should be examined.

The effects of occupational stress, critical incident stress and Post Traumatic Stress Disorder cannot be more clearly illustrated than in the case of firefighter Robert O'Donnell. After he rescued baby Jessica McClure in Midland, Texas, his life was never the same again. Over a seven-and-a-half year period, Robert O'Donnell went from a high-profile hero, to an emotionally troubled firefighter, to a prescription drug abuser, without a job or family and, finally, to a suicide victim. Robert was a psychological trauma victim. He paid the ultimate price eight days after the Murrah Building Bombing in Oklahoma City (Munk, 1998). This was lamented by Ray Sprague, EMT-P, "We go out and bust our butts on a daily basis to save lives. [Then] to see people who have so much to live for [commit suicide], it confuses you . . . It's a sad thing to see happen. There had to be a better way. [Robert and another firefighter who took his own life last year] left families, lots of friends and lots of people wondering why" (Becknell and Ostrow, 1995).

"In April 1996, a Jackson (Miss.) Fire Department firefighter (Kenneth Tornes) went on a shooting spree, killing his wife and four department officers before being wounded in a shoot-out" (Leusch, 1999). Occupational stress and violence are not only expensive in terms of the lives lost, but also in terms of sheer financial cost. "In the United States, the cost of workplace violence to employers

Suicide and workplace violence are only the tips of the iceberg. In far greater numbers, we see firefighters and other emergency workers experience non-life threatening psychological traumas.

Typically these are classified as Burnout, Critical Incident Stress, and Post Traumatic Stress Disorder.

Several instances were examined in a *JEMS* editorial:

- "But then I started to overload. I had several bad calls: traumas, codes and the like.
 Although I had been good at shrugging these off as port of the job, I started to bring these overwhelming feelings home. My wife noticed it, but didn't understand it. Things got worse. One of my former partners was killed in a shoot-out with the police. He wasn't just a partner he was my friend." (Burnout Rekindled, 1998)
- "Then, the final straw: I responded to a fellow employee's house for a medical emergency. She refused my care but was in definite need of medical attention. A police officer on scene agreed with me. The next thing I knew, I was transporting my mentor and friend to the ED in handcuffs under the authority of a police committal" (Burnout Rekindled, 1998).
- In a discussion of emergency services stress being like an emotional pressure cooker, the respondent angrily stated, "I'd been on the job for more than 15 years and now some psychologist from the University of Snootsville was going to miraculously help me cope with my emotions" (Emotional Pressure Cookers, 1999).

One of the first signs of stress in firefighters and other emergency services personnel is chronic on-the-job fatigue. This is described in Paul Werfel's article, "Chronic on-the-job Fatigue." Werfel points out that we are all susceptible to this phenomenon and need to guard against it (Werfel, 1999).

Steve Delsohn, in chapter four, "Dealing with Darkness," of his book, examined the psychological stress of fire fighting. The author examines the behavior of fire fighters during and after fires, stabbings, shootings, acts of domestic violence, terrorist acts, automobile accidents, airplane

the firefighter's toughness and also the feigned toughness. As Delsohn points out, "Firefighters can

crashes, hurricanes, tornadoes and earthquakes. He examines the public's expectation of toughness,

feel." This may not always be evident. The stress can be contained and hidden, but it is still there.

"Everybody's a tough guy when they're at work" (Delsohn, 1996).

This hiding and the containing of stress are part of the firefighter's problem. "Dissociation at the time of trauma may protect the victim from a full conscious appreciation of terror, helplessness, and grief, but at the cost of long-term difficulties in the integration and mastery of the event. The concept of traumarelated dissociation was first developed by Pierre Janet in the 1880s" (Marmar et al., 1996).

A further review of the literature brings us to Kate Dernocoeur's article, "Are We Getting The Help We Need." She sums this up as, "The situation may not be perfect, but parts of it are excellent." Here we see that CISM (critical incident stress management) has come a long way, but there is so much more work to do (Dernocoeur, 1995).

Some might question, "Just how much stress is there really out there?" I reviewed the popular literature and found the following. In Les Krantz's work, *Jobs Rated Almanac*, he rates the job, firefighter, as the second most stressful job in the United States with a score of 249. Only the President of the United States of America, at 250, received a higher score. Under physically demanding, Krantz rated firefighting as 249 on a scale of 250. NFL football players were rated slightly higher at 250 (Krantz, 1999). As recently as July 11, 1999, Winik was quoted regarding stress, "Wherever you are, whatever you do, it's a part of your life . . . and it's probably making you sick." One of the jobs Winik showcased was firefighting and second was that of emergency medical technicians. These jobs are

dangerous. They are tough. They are also being combined in cross training throughout the nation. Winik, however, points out that "any job that has unrealistic expectations, poor communication, difficult co-workers, lack of routine or unsettling change will likely be stressful" (Winik, 1999). This information is also found in the High-Risk Occupations Chapter of Organizational Risk Factors For Job Stress. In that section's introduction the editors note, "Unfortunately, surveillance systems that enable collection of data on the prevalence of stress-related disorders of job-stress risk factors across occupations and thus enable the ordering of occupations according to risk for job stresses are absent or insufficient in the United States. In contrast, the European Community and some member states have recently initiated surveys of work conditions that permit conclusions regarding relative, occupational-specific risk for job stress and changes in risk over time" (Sauter, & Murphy, 1995). In chapter fifteen of the same work, the authors (Beaton, Murphy, Pike and Jarrett, 1995) examine "Stress-Symptom Factors in Firefighters and Paramedics." These authors see the issue of stress in emergency service personnel clearly. "The job-stress `monster in the box' is perhaps no more apparent and menacing than it is for professional firefighters and paramedics." It is in this work that the crux of dealing with occupational stress in the fire service is explained clearly in terms of factors and a solution is suggested. "A comprehensive approach to stress management in firefighters and paramedics must necessarily be more broadly based than critical-incident stress debriefings. Moreover, the results of this investigation suggest that perhaps only 15% to 20% of firefighters and paramedics are at risk and in need of intensive stress-management treatment. Perhaps by studying the mediating variables that seem to be protective for the majority of firefighters and paramedics, we can better develop preventive programs for all FFs/PMs and remedial programs for the at-risk groups." As early as 1990, this comprehensive approach had been suggested by investigators such as Jeffery Mitchell and Grady Bray. In *Emergency Services Stress*, they suggest

a six level model appropriately named, "Reaper." "Reaper" is quite useful when an organization begins

to address the issue of stress management in a thoughtful, systematic way. Reaper stands for R-16 recognition, E-educate, A-accept, P-permit, E- explore, and R-refer. Each of the components can stand alone, but together they form a matrix of organizational and individual wellness to combat stress in both the organization and in the individual (Mitchell & Bray, 1990).

Research primarily involved a review of literature from the Learning Resources Center located at the National Fire Academy, the Lister Hill Medical Library of The Health Sciences at the University of Alabama in Birmingham, the Critical Incident Stress Management Group of Alabama, BREMSS Region, the National Fire Protection Association and contact with several mental health-care professionals that are familiar with psychological stress. Current national and local standards regarding psychological stress and mental wellness were also reviewed including NFPA 1500 (1997 Edition) and NFPA 1582 (1997 Edition).

The primary objective was to evaluate what standards and procedures were already in place and their functionality. The secondary objective was to examine a toolbox of enhancements. Finally a total psychological wellness program would be developed using current and additional components to complete the package. Hopefully, this process would be one that others could emulate. Please refer to the appendices for details.

First, all new recruits were examined by a licensed physician to determine their fitness as a firefighter. NFPA Standard 1582, Medical Requirements for Fire Fighters, 1997 Edition was used to guide the physician and the department administrator.

Second, the new recruits were given a comprehensive drug screen to determine the possibility of substance abuse problems prior to their employment.

Third, the new recruits were required to complete the Minnesota Multi-phasic Personality

Inventory and the Hilson Safety and Security Risk Inventory to determine their psychiatric suitability for the position of firefighter.

Limitations

While the project's limitations were many, these limitations underscore the need for further

research in this important area.

One limitation was that recruit medical records are kept private and confidential. Therefore, it is very difficult to examine some of the information in a factual manner without breaching the individual's right to privacy.

A second limitation was the scarcity of scientific data on the daily stress exerted on firefighters and emergency responders by their work environment. Raymond J. Navarre, Human Resources

Officer of the Toledo Fire Department describes these below (Navarre, 1987).

Navarre summarizes these as:

- 1. Need for private space the need to be away from the public and other firefighters in the fire station.
- 2. Need for privacy the need to have an area that is personal.
- 3. Need for a balance between the institutional quality of the firehouse versus the family atmosphere and the firefighters' relationships as members of the firehouse.
- 4. Need to control the noise and media pollution the need for quiet for relaxation, study and sleep.
 - 5. Need for relaxing and comfort producing accouterments need for furnishings and surroundings that are physically, mentally, and psychologically stress-reducing, or at least not stress promoting (Navarre, 1987).

A third, many of the studies examined stress as it related to mass casualty disasters, such as the Desplaines Air Crash or specific incidents, like the Baby Jessica rescue. Cumulative stressors while anecdotally known to exist, were not as well examined in the literature. However, Boudreaux, Mandry and Brantley (1995) successfully examine the cumulative stressors using the Social Readjustment Rating Scale (SRRS).

The 15 Most Common Major Life Events Experienced by EMT's, Using the

SRRS as a Measure.

(High End Stress)

1.	Change in financial status	9.	Change in residence
2.	Vacation	10.	Change in work hours/conditions
3.	Change in living conditions	11.	Outstanding personal achievement
4.	Personal injury or illness	12.	Change in eating habits
5.	Change in sleeping habits	13.	Change in social activities
6.	Change in work responsibilities 14.	Chang	ge in number of arguments with spouse
7.	Mortgage geater than \$10,000 15.	Mortgage less than \$10,000	
8.	Begin or end school	(Low	End Stress)

The 15 Most Common Daily Stressors Experienced by EMTs

Daily Hassles (Non-work Days) Daily Hassles (Work Days)

thought about unfinished work had sleep disturbed

thought about the future thought about the future

unable to complete all plans for today thought abut unfinished work

hurried to meet a deadline interrupted during task/activity

money problems interrupted while thinking/relaxing

did something that you did not want to do concerned about personal appearance

had sleep disturbed hurried to meet a deadline

concerned about personal appearance did something that you did not want to do

interrupted during task/activity had difficulty in traffic

interrupted while thinking/relaxing money problems

worried about another's problems unable to complete a task

unable to complete a task interrupted while talking

waited longer than wanted to worried about another's problems

experienced illness/physical discomfort unable to complete all plans for today

interrupted while talking experienced illness/physical discomfort

A final limitation is that a comprehensive approach to the subject, even by the noted experts, seems to be elusive. One study examines the soundness of the new recruit. Another approach looks at critical incident stress management. Still, others examine the psychological and physical illnesses after the fact. In the literature reviewed, there was a decided lack of completeness and comprehensiveness.

New Recruits/Applicant Screening:

Links have been found between early physical and sexual abuse and later dissociative behavior due to stress (Spiegel and Cardena, 1991).

Repeated and severe childhood abuse is more strongly associated with adult dissociative behavior related to trauma (Spiegel and Cardena, 1991).

Various personality types, such as those that exhibit signs of shyness, immaturity or a lack self-confidence and motivation seem to fair poorer based on several of the studies found.

Adults with PTSD are more hypnotizable than adults with other disorders and normal adult subjects (Spiegel and Cardena, 1991).

Critical Incident Stress Management and Post Traumatic Stress Disorder:

Few of the investigators have approached firefighter mental health as a continuum starting with recruitment and monitoring it through employee maturation, advancement and finally retirement. Surely we want to leave our employees in at least as healthy a condition as we acquired them. In the CISM and PTSD articles and reports found, the information was presented in a cause and effect setting. Very little was said about the emotional training, or the stability of the disaster participants prior to the incident. Therefore, I had to ask the question, "Were some personnel already having psychological problems and the incident only acted as a catalyst to bring them crashing down sooner?"

Answers to the Research Questions:

 What psychological fitness and wellness standards currently exist at the national, state and local levels?

Nationally, NFPA Standard 1500 and NFPA Standard 1582, are the standards that firefighters must meet to be hired and to remain on the job. These standards do a fine job of defining physical requirements. However, they offer little in the way of psychological guidelines. They touch on occupational stress only briefly. In NFPA 1582, Section 3-18, a verbal psychiatric history is required, but if the recruit has not been formally diagnosed, he may not even know that he has a problem with stress, panic attacks or depression. No testing is required. The physician administering the examination may have little psychological training.

In NFPA 1582, Appendix E, E-1, Physical Exam Summary, under Neuro, the question is asked to the prospective firefighter or firefighter, Do you have, "A Psychiatric or Emotional Problem?" This is not adequate because the problem may not manifest itself until after a job-related incident. The individual may also have the problem, but consider it normal. Therefore a national standard of sorts exists through NFPA 1500 and NFPA 1582, but the standards are vague at best and leaves us with little information for benchmarking.

In Alabama, the minimum standards through the Alabama Firefighters Minimum Standards Commission does not have a psychological component at this time.

Locally, the Personnel Board of Jefferson County does not require any psychological 2 fitness testing before placing a firefighter's name on their list for employment by a jurisdiction within Jefferson County.

The Mountain Brook Fire Department has required all potential recruits to complete the Minnesota Multi-phasic Personality Inventory and the accompanying Hilson (HSRI) as a psychological screening tool prior to a formal offer of employment. This has limited predictive ability because of the following flaws. First, it has only been used for the past five years. Therefore, we have had little time to determine if the test will serve as a good predictor. Secondly, since the start of the screening, the department has experienced a very slow employee turnover. Therefore, very few employees have completed the psychological screening instruments. Finally, true bench marking would require us to repeat the screening process after an employee has been on the job for a few years and also as part of his or her exit or retirement interview. Once we have completed each of these steps, we will have a clearer picture of our employees' psychological health and wellness.

• Should psychological testing be used to screen new recruits?

Absolutely. As indicated in the literature reviewed, we now know that 15% to 20% or more of our firefighters who are at risk for suffering some type of psychological problem during their career. Screening new recruits would help to identify those who are at a higher than average risk for future stress related employment problems. They could be supervised with more care, offered counseling as needed and taught additional coping techniques. This would serve to safeguard them and protect the team as well. We also know from several of the articles, Marmar, et al. (1996), Marmar, Weiss, Metzler, Delucchi, Best, and Wentworth (1999), and Epstein, Fullerton, and Ursano (1998), that the individual(s) may have several traits that predispose him/her to psychological

stress. These are red flags to consider, if we know them in advance.. If these individuals become symptomatic, we can care for them earlier in the process so that chances for a more positive outcome are enhanced.

 Are firefighters, as part of our emergency response system, a group that is at special or additional risk for psychological stress related problems?

Firefighters are absolutely a group at special risk. Firefighters tend to be life long emergency employees. Paramedic and law enforcement officers seem to be more transient. As lifelong emergency workers, cumulative stress is a significant potential problem. An increasing number of firefighters are also at special risk as the fire service continues to take on more missions, such as EMS, emergency medical services, high angle rescue, trench rescue, and hazardous materials mitigation. As our emergency forces continue to downsize or right-size, fewer responders are taking on more emergencies each year. The variety and the complexity of these emergencies are also growing. As this continues, apprehension will increase as firefighters will not be as sure of what they might encounter on the next response.

The variety of hazards that firefighters are expected to face has increased. In addition to structure fires, domestic violence, and automobile accidents, firefighters recently have been asked to work in the midst of civil unrest, urban terrorism, structural collapse, earthquakes, and hurricanes. This was clearly evident when two student gunmen assaulted Columbine High School. The incident was dangerous for the Littleton Fire Department, but it was also extremely frustrating (Heightman, 1999). More recently, the fire service has had to prepare for the stress associated with weapons of mass destruction. Firefighters are also at risk because of their inherent work environment:

 What can be done to manage, reduce or eliminate this risk of psychological stress in the general firefighter population?

consider the risk of contracting AIDs, Hepatitis, Tuberculosis, or Meningitis.

First, psychological stress will never be totally eliminated. Next, managed stress is desirable. Third, we must embark on a risk reduction program that is all encompassing. One that looks at psychological stress in the fire service in a holistic sense, starting with the new recruit, involving the firefighters and fire officers and encouraging potential retirees to maintain good psychological health as they conclude their careers.

Pre-Career Screening

Identify candidates that may be substantially at risk. Personality features have been identified in several studies. "We found those rescue workers who were younger, shy, inhibited, uncertain about their identity, or reluctant to take leadership roles, and who had cognitive styles, who believed their fate was determined by factors beyond their control, and who coped with critical incident exposure by emotional suppression and wishful thinking, were at higher risk for acute dissociative responses to trauma and subsequent symptomatic distress" (Marmar et al. 1996).

Pre-Career Education

Stress orientation in recruit schools.

Situational reviews, case studies involving high stress situations.

"Knowing what to expect may have led to greater feelings of control in the 26 morgue group, and perceived control seems to buffer stress and reduce its effects on immunity. Other workers had fewer clear expectations of what to expect when they arrived at the crash site, and there was considerable uncertainty about what they would encounter. There were probably less structure and supervision for their tasks and less predictability in this group, and they may have perceived less control over their situation. When exposure occurred in this context, it may have had stronger effects on workers. Knowing what sights, sounds, and smells to expect is an important factor in the reduction of anxiety due to a traumatic death exposure. Body-handlers from a variety of accidents unanimously agreed that workers should be told the worst about any site before entry to minimize any surprises" (Delahanty, Dougall, Craig, Jenkins, and Baum, 1997).

Environmental Modification

Daily assignments to address the 22 to two-ratio. Firefighters are on calls two hours out of twenty-four, but are expectant for twenty-two, thus increasing stress.

Privacy areas in the fire station will need to be provided or increased. Ambient noise will be reduced in fire stations.

Employee Counseling and Chaplaincy Programs

Employee counseling will be provided for employees in a more informal setting. It will be provided to employee groups, individuals, and family groups.

Chaplaincy programs have been identified as extremely helpful as many individuals have a strong religious faith on which to rely for coping with stress related problems.

Critical Incident Stress Management

Critical Incident Stress Management (CISM) and Critical Incident Stress

Debriefings (CISD) are important and need to be integrated into a total stress
reduction package. Their use needs to be guided by the department's
administration as issues of overuse and under use continue to surface in the
popular literature.

Much more information needs to be gathered in this area. "The promotion of CISD and CISM has continued without scrutiny, perhaps because little is known about the stress associated with emergency work. As one veteran firefighter told JEMS, "Until I heard Mitchell speak, I didn't realize there was a problem. For years I had witnessed numerous tragic events without developing any of the symptoms of stress. I began to think something was wrong with me" (Ostrow, 1996).

• Rescreening/Monitoring

At regular intervals, five years perhaps, employees should be retested with appropriate instruments. This new score can be compared to life events, and the employee's original score. This will create a stress bench marking system for each individual. These scores will also be more valuable in comparing the scores of similar groups as well as just the individuals.

• Retirement Counseling and Planning

As an employee nears retirement, counseling and retirement planning should enter the picture. This will allow for a final assessment of the individual prior to the individual leaving the department. It will also allow a mental health professional to help determine if the person is truly retiring or is fleeing a situation that he or she can no longer handle. Retirement in itself is a tremendous adjustment. Counseling at this stage of the employee's career will allow him/her to continue with the same assurances they expressed when they entered recruit school and reported to duty for the first time.

DISCUSSION

The importance of psychological wellness and stress reduction for firefighters was clearly underlined by The United States Fire Administration's *Stress Management Model Program* for Firefighter Well-Being, FA-100, as early as February 1991. Other leading agencies such as The International Association of Fire Fighters in cooperation with the International Association of Fire Chiefs have picked up on this lead. The Fire Service Joint Labor Management Wellness/Fitness Initiative has incorporated psychological wellness into their overall plan. From the IAFF Fitness & Wellness Initiative website the following was noted: "Fire fighters must continue to respond to emergency incidents that require extreme physical output and often result in physiological and psychological outcomes. Such situations, over time, can and do affect the overall wellness of the fire fighting and emergency response system" (Fire Service Joint Labor Management Wellness/Fitness Initiative, 1999). One of the key points identified by the task force to investigate is: "Develop a holistic wellness approach that includes: medical, fitness, injury/fitness/medical rehabilitation and behavioral health." This is being

- First, we must screen our people as potential fire fighter recruits. We already know
 from several published studies which personalities are at special risk for psychological
 stress.
- Second, we need to offer opportunities to de-stress our operational environment,
 starting with the fire station.
- Third, departmental leaders must be involved at all levels.
- Fourth, stress education must not involve just the fire fighter, but also his/her family and significant others in his/her life.
- Fifth, critical incident stress management and critical incident stress debriefing
 information must become an integral part of the department's philosophy and
 management strategy. Trying to use CISD on the spur of the moment creates problems.
 We need to determine the appropriateness of this intervention.
- Sixth, routine bench marking needs to take place throughout each employee's career.

 As pointed out earlier, 15% to 20% of the emergency employees currently in the field are believed to be at significant risk for mental health problems. We cannot wait until they crash. Once they crash, recovery is difficult and, at times, impossible. We must adopt a proactive rather than a reactive approach.

Finally, employee exit interviews should have a mental health component. This will assure us that the individual is not leaving the fire service for the wrong reasons. It is important to determine if the decision to retire is premature and if the employee is truly prepared to leave his/her major support group.

RECOMMENDATIONS

Based on literature reviewed, interaction with the CISM of Alabama, BREMSS Region, national and local events, and events in the author's department, recommendations are:

- Current psychological screening in the Mountain Brook Fire Department should continue to be part of the department's standard hiring practice.
- In recruit school, individuals who show signs of high risk for occupational stress as identified in several of the articles reviewed should receive additional training in the avoidance of occupational stress. (See Appendix A)
- On duty training should include psychological as well as physiological stress management components. This should occur at least once a year. The approach should be similar to the OSHA required blood borne pathogens program.
- All fire officers should be familiar with the signs of psychological stress that may manifest in one or more of their personnel. (See Appendix B)
- All fire officers should be familiar with the assistance mechanisms available.

CISD, Critical Incident Stress Debriefings

Employee Assistance Program Services

Chaplaincy and/or other spiritual guidance venues

- Work schedules should be reexamined to enhance down time and to alleviate boredom.
- Fire Station interiors should be redesigned for more privacy and areas of relative quiet.

- Family interaction should be encouraged to relieve feelings of duty conflict and abandonment.
- Individual time lines should be established by the health and safety officer to plot major life events such as: an exposure to a prolonged rescue, fire related deaths with burns, the severe injury or death of a child or other events as denoted in Appendix C.

In closing, it should be remembered that this topic of psychological stress in the fire service is one that is just recently being explored in earnest. We must master the firefighter's dichotomy that Steve Delsohn discusses in his work. As firefighters, we can be tough, but we can not continue to hide our emotions, our fears and our sorrows. My organization has taken a first step with the psychological screening of new recruits. Much more is to be done.

It is only now that the subject is being studied in a comprehensive fashion rather than piecemeal. The need is immediate. There is a genuine need for the consolidation of information and resources. Much of the information in this report was extrapolated from diverse sources such as psychiatric journals, management text, fire service periodicals and emergency medical publications. In the past, a few areas were well explored, leaving adjacent areas untouched. Leadership, like that provided by the United States Fire Administration in 1991, is sorely needed. As one individual said on another topic, "Now is the time that we must think globally, and act locally." Global knowledge and local action will keep our firefighters psychologically well in the next millennium.

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Individuals That Show a Greater Chance of Experiencing Work-Related Stress Problems

After Working an Incident Where There Has Been Significant Suffering and/or Death.

These personality traits may predispose a firefighter to suffer acute dissociative responses to trauma and subsequently psychological distress:

- Younger in age
- Shy, inhibited or uncertain about their identity
- Reluctant to take leadership roles
- Global cognitive styles
- Believe that their fate was determined by factors beyond their control
- Practice emotional suppression
- Utilize wishful thinking

(Marmar et al., 1996)

APPENDIX B

Manifestations of Psychological Stress That May Be Noted By Shift Officers and Others After An Event That Involved Significant Suffering and/or Death.

	1		T
Physical	Cognitive	Emotional	Behavioral
Chills	Confusion	Fear	Withdrawal
Thirst	Nightmares	Guilt	Antisocial acts
Fatigue	Uncertainty	Panic	Inability to rest
Nausea	Hyper-vigilance	Denial	Intensified pacing
Fainting	Suspiciousness	Anxiety	Erratic movements
Twitches	Intrusive images	Agitation	Change in social activity
Vomiting	Blaming someone	Irritability	Change in speech patterns
Dizziness	Poor problem solving	Depression	Loss or increase of appetite
Weakness	Poor abstract thinking	Intense anger	Hyper-alert to environment
Chest pain	Poor concentration/ memory	Apprehension	Increased alcohol consumption
Headaches	Disorientation of time, place or person	Emotional shock	Change in usual communications
Elev. Blood Pres.	Difficulty identifying objects or person	Emotional outbursts	Etc.
Rapid heart rate	Heightened or lowered alertness	Feeling overwhelmed	
Muscle tremors	Increase or decreased awareness of surroundings	Loss of emotional control	
Shock symptoms	Etc.	Inappropriate emotional response	
Grinding of teeth		Etc.	
Visual difficulties			
Profuse sweating			
Difficulty breathing			
Etc.			

"Emotional stress is a normal reaction to a critical incident. For some, the effect is rapid. For others 38 symptoms may occur years later. Critical Incident Stress Syndrome (CISS) in the title attributed to milder reactions to a stressor. More severe reactions to stress stimuli are called Critical Incident Stress Disorder (CISD)."

*Any of these symptoms may indicate the need for medical evaluation. When in doubt, contact a physician (L&M Consulting, 1999).

APPENDIX C

A Firefighter Psychological Wellness Check Sheet Part 1.

Name:
Date of Initial Pre-employment MMPI/Hilson:/ Evaluator:
Initial MMPI/ Hilson Screening (attach reviewers notes as appropriate) Commentary:
Follow-up Screenings and Commentary:/Evaluator:
Reason for follow-up: () 5 year period () Traumatic Incident () Emotional Reactivity
Follow-up Screenings and Commentary:/Evaluator:
Reason for follow-up: () 10 year period () Traumatic Incident () Emotional Reactivity
Follow-up Screenings and Commentary:/Evaluator:
Reason for follow-up: () 15 year period () Traumatic Incident () Emotional Reactivity
Follow-up Screenings and Commentary:/Evaluator:
Reason for follow-up: () 20 year period () Traumatic Incident () Emotional Reactivity
Follow-up Sceenings and Commentary:/Evaluator:
Reason for follow-up: () 25 year period () Traumatic Incident () Emotional Reactivity or retirement
Follow-up Screenings and Commentary:/Evaluator:
Reason for follow-up: () 30 year period () Traumatic Incident () Emotional Reactivity or retirement

Additional pages can be added to this document to complete the comments section or any of the other areas.

Part II.

	Firefighter Critical Incident Stress Time Line
Firefighter:	H&S Officer:
_	to be completed by the firefighter and his health and safety officer each time an incident is
	at deals with one of the following Prime Factors:
•	Child victim(s)
•	Exposure to burn victim(s)
•	Prolonged extrication activities
•	Exposure to body parts, or dismemberments
•	Death of a friend, family, or co-worker
•	Disaster, crash site or multiple casualty situation
•	High profile media coverage
•	Any combination of the above items.
It is perfectly na	atural to feel badly about the victim(s) following an incident. This time line is designed to make sure
	gh these feelings. It is also designed to assist you in knowing when you may need some additional
help.	
NFIRS Inciden	t Number: Date of Incident:/
	Incident Commander:
Type of Incide	
Contributing C	ritical Incident Factors: (add additional pages if necessary)
Have you respon	nded to an incident that included one of the prime factors in the last:
	, Year (), Six months (), Less than six months (), Less ()
•	ence any of the following after that incident?
	n, sadness, unhappiness
() anxiety or	
() guilt	
	or "zombie-like" feeling
() disbelief o	
` '	rienced any other stressful life events in the last six months: YES / NO
	encing any of the following following this incident?
	n, sadness, unhappiness
() anxiety or	
() guilt	
	or "zombie-like" feeling
	or confusion
` '	llowing tools would you like to use to help you "get back on the road."
	sion with other rescuers that were at the incident & a facilitator.
	Incident Stress Debriefing with trained lay councilors and psychological councilors.
	her alone or as part of a group to visit the employee assistance councilor.
* *	h the department chaplain or your own clergy.
` '	ation of the above.
	the above at this time.
, mone or th	Cupore at this tille.
Follow Up Repo	orts: Dates
	post incident;; repeat above questions and record information.
	s post incident;/; repeat above questions and record information.

() 3 years post incident;	/; repeat above questions and record information.	
() 5 years post incident;	/; repeat above questions and record information.	41

The department health and safety officer is not a professional councilor. At any time in this process, he can refer the individual in question to the fire department physician or to employee assistance.